



# FortiMail VM (VMware) Install Guide



## FortiMail VM (VMware) Install Guide

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# Overview of FortiMail VM

Welcome and thank you for selecting Fortinet products to protect your network.

The FortiMail VM Secure Messaging Platform is part of an integrated hardware and software solution that provides powerful and flexible logging and reporting, antispam, antivirus, and email archiving capabilities to incoming and outgoing email traffic. FortiMail has reliable and high performance features for detecting and blocking spam messages and malicious attachments. Built on Fortinet's FortiOS™, FortiMail antivirus technology extends full content inspection capabilities to detect the most advanced email threats.

This guide assumes that the reader has a thorough understanding of VMware® concepts, procedures, and terminology.

VMware vSphere Hypervisor™ (ESX/ESXi) software **must** be installed on a server prior to installing FortiMail VM. Go to <http://www.vmware.com/products/vsphere-hypervisor/index.html> for installation details.

FortiMail VM supports VMware vSphere Hypervisor™ ESX/ESXi 4.0, 4.1, 5.0, and 5.1.

## Licensing

When you place an order for FortiMail VM, Fortinet sends a registration number to the email address supplied on the order form. Use that number to register with FortiCare ([support.fortinet.com](http://support.fortinet.com)) and to obtain a license file (.lic). You need the license file to activate FortiMail VM and unlock the full range of features, such as the maximum virtual memory and number of CPUs.

FortiMail VM includes a 15-day trial (VM00). The trial version provides all FortiMail VM functions except antispam and antivirus signature updates and the FortiGuard Antispam query. Because the trial version only provides low encryption, you may not be able to access the FortiMail VM web UI through HTTPS, unless you have enabled weak cipher in your browser. The trial period begins the first time you start FortiMail VM. If you do not install a valid license after the trial period expires or after your licence expires, you will not be able to make configuration changes to FortiMail VM.

Fortinet provides several licenses for FortiMail VM: a 1-CPU license (VM01), a 2-CPU license (VM02), a 4-CPU license (VM04), and an 8-CPU license (VM08). You can install your full license from FortiCare at any time during or after the trial period. For details about how to install or update a license, see “[Installing the license](#)” on page 18.

## Resources

Table 1 shows the resources available with each license.

**Table 1: FortiMail VM resources**

	VM00/01	VM02	VM04	VM08
Hypervisor supported versions	VMware ESXi/ESX/4.0/4.1/5.0			
Maximum vCPUs	1	2	4	8

**Table 1: FortiMail VM resources**

	VM00/01	VM02	VM04	VM08
Maximum vNICs	4	4	6	6
Virtual Machine Storage (Recommended Minimum/Maximum)	50 GB/1 TB	50 GB/1 TB	50GB/2 TB	50GB/2 TB
Virtual Machine Memory (Minimum/Maximum)	1 GB/2 GB	1 GB/4 GB	1 GB/4 GB	1 GB/12 GB

Most resources in [Table 1](#) are available after successful deployment of the OVF file and validation of the license file. See [“Deploying the FortiMail VM software” on page 8](#) and [“Starting FortiMail VM” on page 15](#).

To use more than one CPUs, you must configure its use once you deploy FortiMail VM. See [“Configuring the number of CPUs” on page 14](#).

For v4.0 MR3 GA and earlier releases, you can reduce the virtual storage to as small as 50 GB (but not smaller than 50 GB) once you deploy FortiMail VM. Starting from v4.0 MR3 Patch 1 release, you can reduce the size to as small as 5 GB. See [“Configuring a smaller disk” on page 15](#).

In addition, FortiMail VM requires a valid FortiGuard connection using:

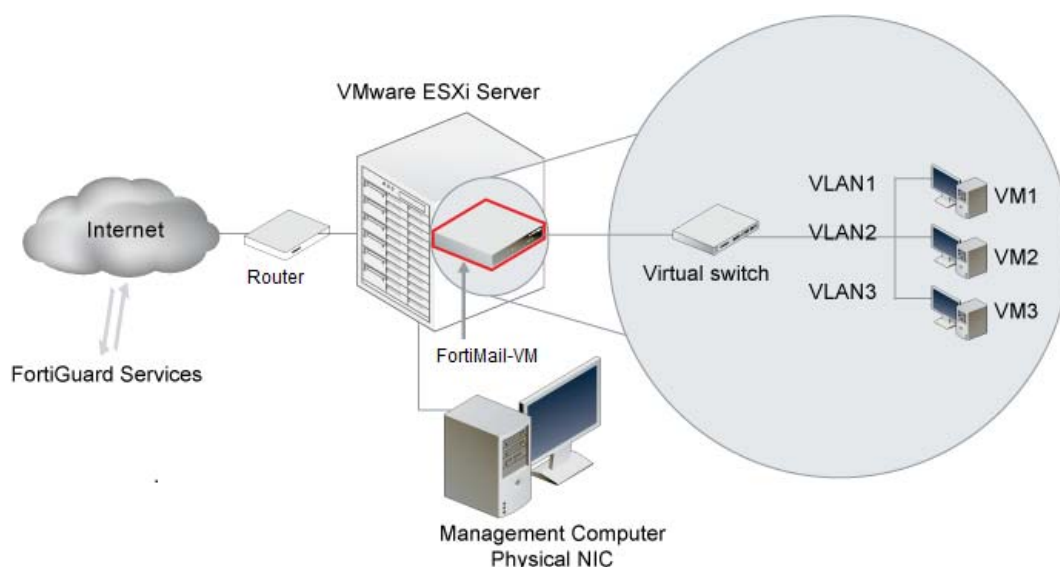
- for DNS lookup; RBL lookup — UDP 53
- for FortiGuard Licensing — TCP 443

## Architecture of FortiMail VM

FortiMail VM, in conjunction with VMware vSphere Hypervisor, leverages the power of virtualization to provide protection for email and mail servers.

FortiMail VM runs on the VMware ESX/ESXi server and is managed using the FortiMail VM web-based manager accessed from the management computer. See [Figure 1](#).

**Figure 1:** FortiMail VM architecture



## Registering your Fortinet product

Before you begin to configure and customize features, take a moment to register your Fortinet product at the Fortinet Technical Support web site, <https://support.fortinet.com>. Many Fortinet customer services, such as firmware updates and technical support, require product registration.

## Customer service and technical support

Fortinet Technical Support provides services designed to make sure that you can install your Fortinet products quickly, configure them easily, and operate them reliably in your network.

To learn about the technical support services that Fortinet provides, visit the Fortinet Technical Support web site at <https://support.fortinet.com>.

You can dramatically improve the time that it takes to resolve your technical support ticket by providing your configuration file, a network diagram, and other specific information. For a list of required information, see the Fortinet Knowledge Base article "Fortinet Technical Support Requirements" at <http://kb.fortinet.com>.

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Fortinet Training Services provide classes that orient you quickly to your new equipment, and certifications to verify your knowledge level. Fortinet provides a variety of training programs to serve the needs of our customers and partners world-wide.

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The Fortinet Knowledge Base provides additional Fortinet technical documentation, such as troubleshooting and how-to-articles, examples, FAQs, technical notes, and more. Visit the Fortinet Knowledge Base at <http://kb.fortinet.com>.

### Comments on Fortinet technical documentation

Please send information about any errors or omissions in this technical document to [techdoc@fortinet.com](mailto:techdoc@fortinet.com).

# Installing FortiMail VM

This chapter provides instructions for installing FortiMail VM:

- Preparing to install FortiMail VM
- Deploying the FortiMail VM software
- Configuring virtual network settings
- Starting FortiMail VM
- What next?

## Preparing to install FortiMail VM

Before installing FortiMail VM, make sure the following are in place and functioning properly:

- The VMware vSphere Hypervisor software (ESX/ESXi) **must** be installed on a network server prior to installing FortiMail VM. This install guide does not cover how to install and set up the VMware server. Go to <http://www.vmware.com/products/vsphere-hypervisor/index.html> for installation details.



Take note of the IP address of the server hosting VMware vSphere Hypervisor. Also get an account name and password on that server. You will need these to log in using the VMware vSphere Client. You also need an IP address from that server's IP pool for use later when configuring FortiMail VM.

- 
- The VMware vSphere Client™ must be installed on the computer you plan to use for FortiMail VM management. This could be a desktop or a laptop connected to your network. If not already installed, install the client before going further.

## Getting the FortiMail VM software

Once registered with Fortinet, do the following:

1. From the link provided by Fortinet, download the FortiMail VM license file (.lic) to the computer you plan to use for FortiMail VM management. You need this file to complete the installation. (See “Registering your Fortinet product” on page 6.)
2. From the link provided by Fortinet, download the compressed FortiMail VM software file to the computer you plan to use for FortiMail VM management.

3. Extract the compressed file to a folder. The contents of the extract vary with the size version of FortiMail VM you downloaded.

For the 250-GB hard-disk version, the contents are:

- FortiMail VM-64bit-250gb-hw7.ovf
- FortiMail VM-disk1.vmdk
- FortiMail VM-disk2-250gb.vmdk

For the 1024-GB hard-disk version, the contents are:

- FortiMail VM-64bit-1024gb-hw7.ovf
- FortiMail VM-disk1.vmdk
- FortiMail VM-disk2-10240gb.vmdk



The 1024-GB OVF may not function if the ESXi block size is set as 1 MB or 2MB. It needs 4-MB blocks.

## Deploying the FortiMail VM software

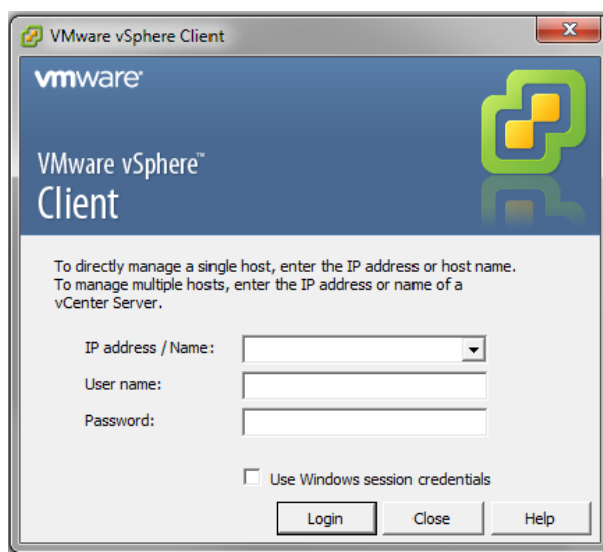
To install FortiMail VM, you must successfully deploy the OVF file using the VMware vSphere Client™.

### To deploy the software

1. Start the VMware vSphere Client.

The client's login dialog appears.

**Figure 2:** VMware vSphere Client login dialog



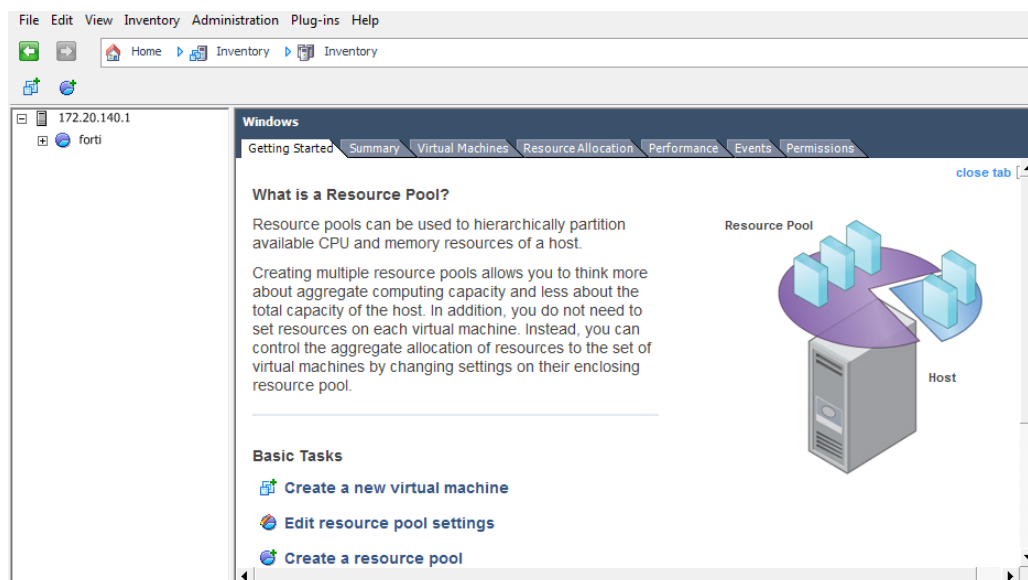
2. Enter:

- the IP address of the ESX/ESXi server hosting VMware vSphere Hypervisor
- an account user name on the ESX/ESXi server
- the account password

When you successfully log in, the vSphere Client window appears.

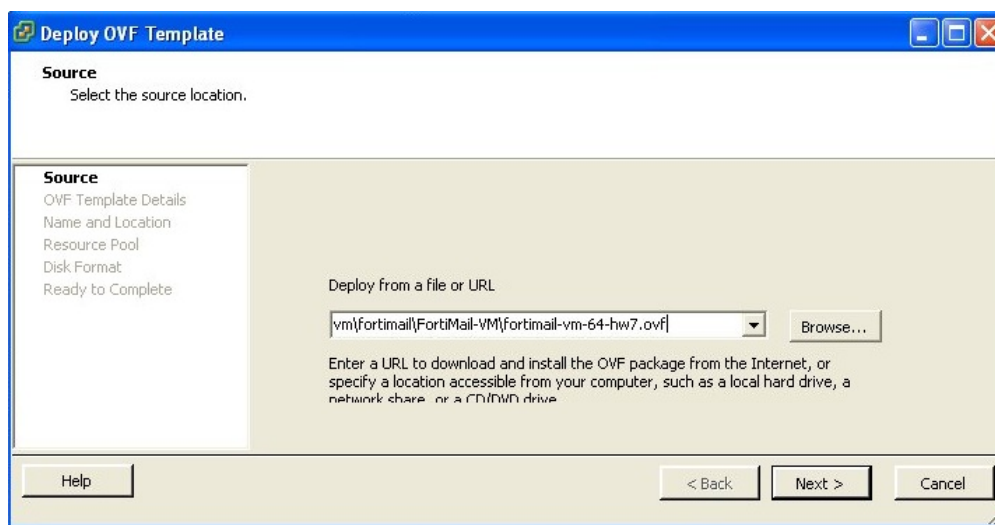


**Figure 3:** vSphere Client window



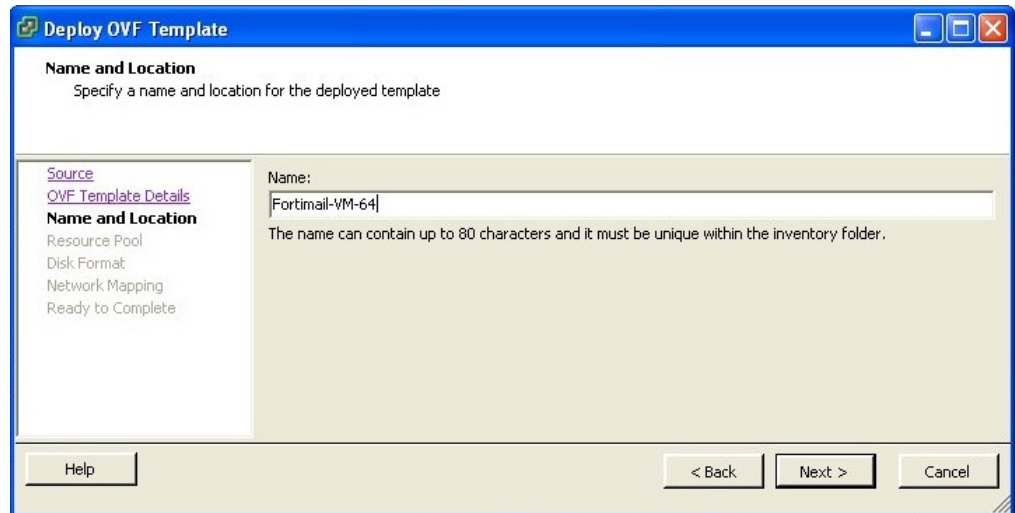
3. On the vSphere Client window, select *File > Deploy OVF Template*.  
The first dialog of the OVF deployment wizard appears.

**Figure 4:** OVF deployment wizard



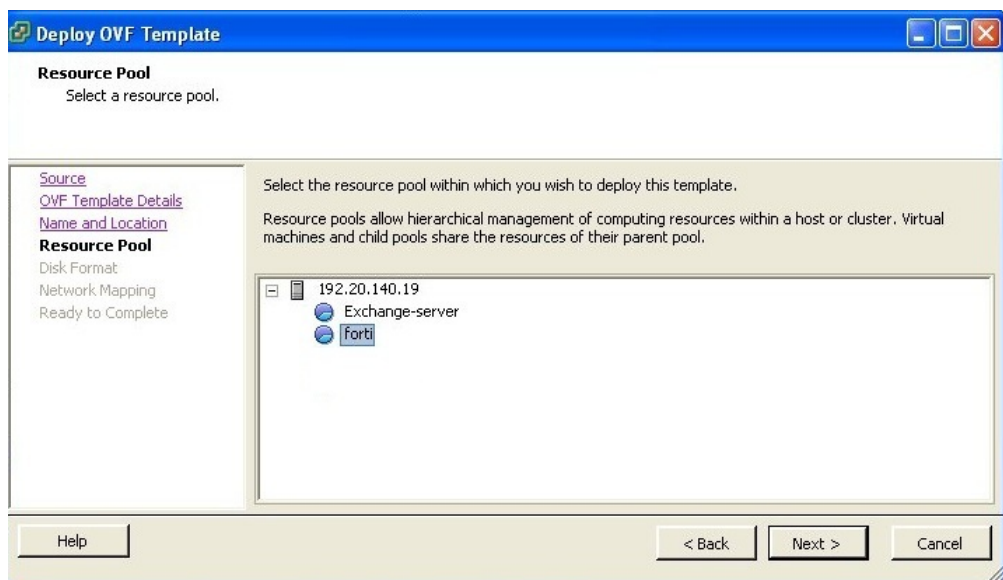
4. Select *Browse* and locate the applicable OVF template file you extracted earlier (for example, FortiMail VM-64-hw7.ovf), and click *Next*.
5. The second dialog displays the details of the deployed file. Click *Next*.  
A window appears and prompts for the name of your OVF template.

**Figure 5:** OVF template name



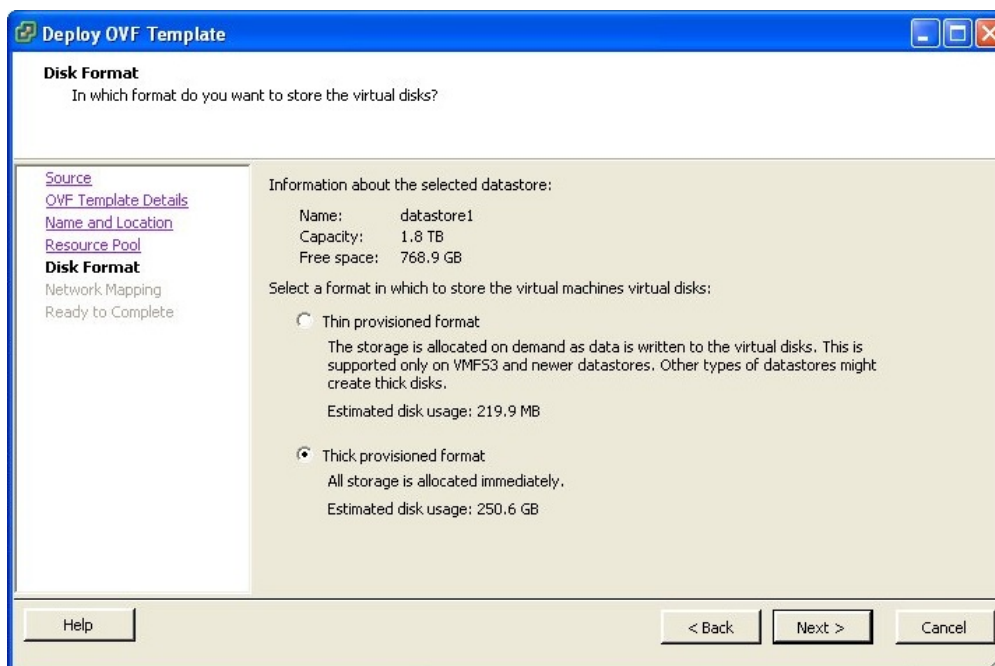
6. Enter a unique name and click *Next*. This becomes the name of your virtual machine.  
A window appears asking where to deploy the OVF template.

**Figure 6:** Resource pool selection



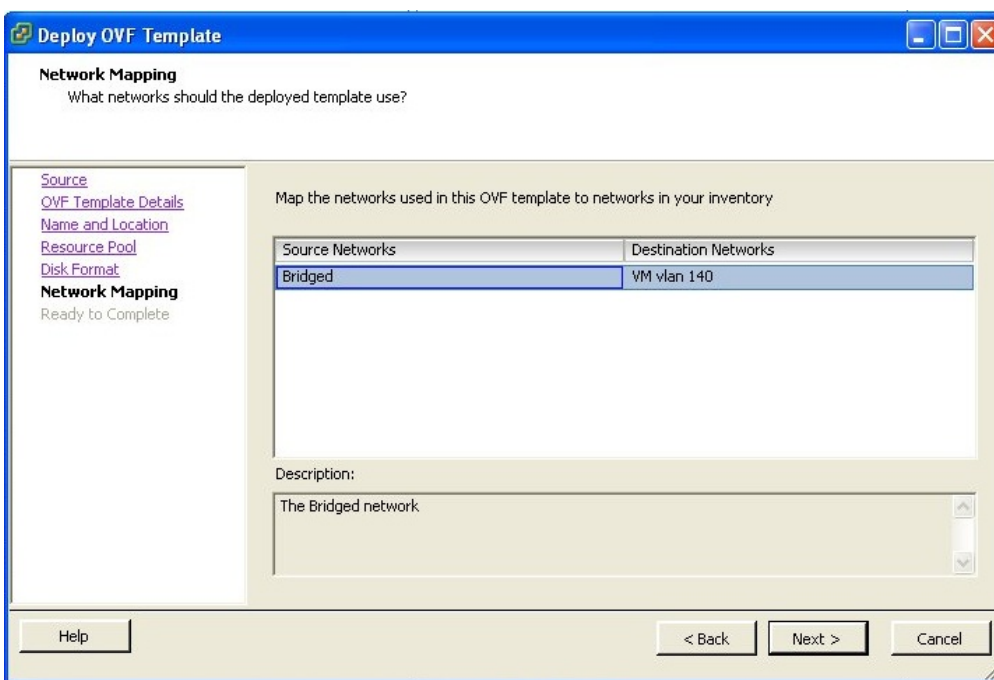
7. Select a resource pool and click *Next*.  
A windows appears asking for the disk storage format.

**Figure 7:** Disk storage options



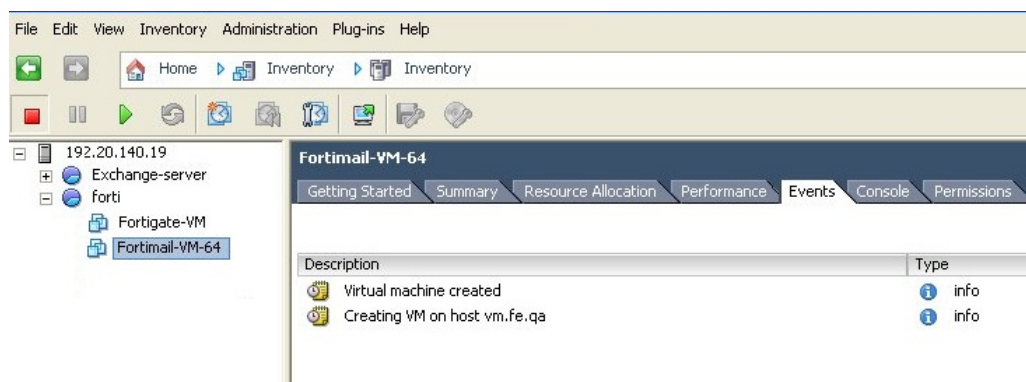
8. Select a format option and click *Next*.  
A window appears asking which network to deploy on.

**Figure 8:** Deployment network



9. Select a virtual network if there is more than one and click *Next*.
  10. A window appears listing all your settings. Click *Finish*.  
The wizard closes.
- The vSphere Client window reappears and displays your new virtual machine.

**Figure 9:** Completed deployment



Do **not** power on FortiMail VM yet if you need to configure the virtual network first.

## Configuring virtual network settings

Before you power on FortiMail VM, you may need to set the number of virtual CPUs or configure the virtual network to support your implementation of transparent mode for FortiMail VM.

This section includes:

- [Preparing for transparent mode](#)
- [Configuring the number of CPUs](#)
- [Configuring a smaller disk](#)

When you deploy the FortiMail VM OVF file, one virtual network interface card (vNIC) is automatically mapped to a port on the ESX/ESXi server. You can change the mapping, or map other vNICs if required. Each vNIC has its own MAC address and one or more IP addresses.

For more information, see the VMware vSphere documentation at [http://www.vmware.com/support/pubs/vs\\_pages/vsp\\_pubs\\_esxi41\\_e\\_vc41.html](http://www.vmware.com/support/pubs/vs_pages/vsp_pubs_esxi41_e_vc41.html)

### Preparing for transparent mode

If you plan to use transparent mode with your FortiMail VM installation, you need to:

- Set promiscuous mode. See [“To set promiscuous mode”](#) on page 13.
- Modify the network adapter configuration. See [“To modify a network adapter”](#) on page 14.

An ESX/ESXi server always has at least one vSwitch. For transparent mode, you need at two vSwitches, one to connect FortiMail VM to the network and one to connect it to the mail server.

Add an additional vSwitch if necessary.



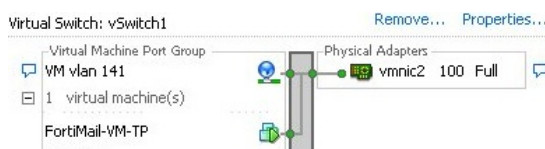
The following example of vSwitch creation shows connection to a virtual mail server hosted on the same ESXi server. For a physical mail server, you need to connect to a physical NIC.

### To add a virtual switch

1. Log in to the vSphere Client.
2. **Do not** power on FortiMail VM.
3. Select the host IP at the top of the left navigation pane.
4. On the *Configuration* tab, select *Networking*.

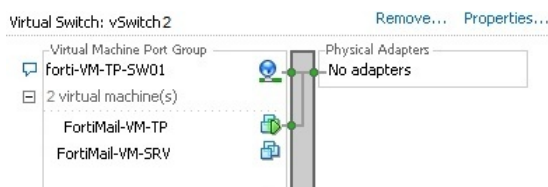
A window with information similar to [Figure 10](#) appears.

**Figure 10:**Virtual switch 1



5. Select the *Virtual Switch* view and click *Add Networking*.
6. Accept the default connection type, *Virtual Machines*, and click *Next*.
7. Select *Create a virtual switch* and click *Next*.
8. Under *Port Group Properties*, enter a network label that identifies the port group to create.
9. Click *Finish*.

**Figure 11:**Virtual switch 2

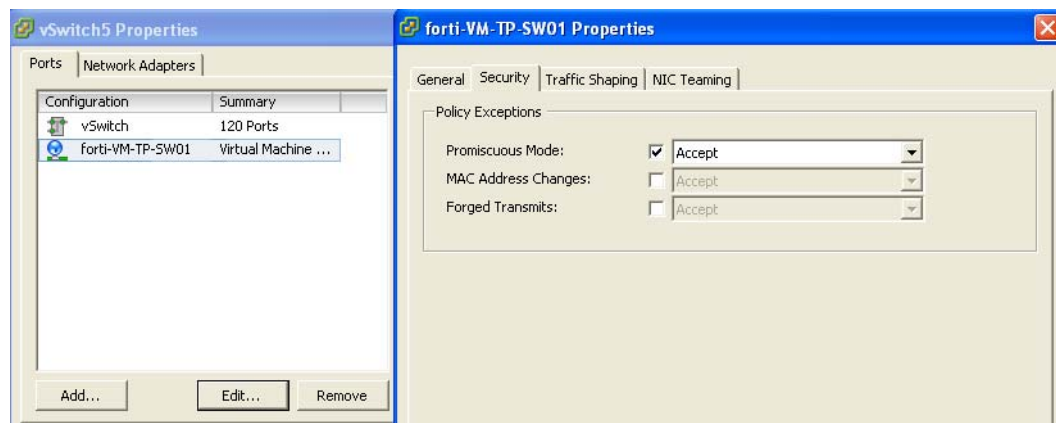


Next, set the network to run in promiscuous mode.

### To set promiscuous mode

1. On the *Configuration* tab, select *Networking*.
2. For each virtual switch, select *Properties*.

**Figure 12:**Setting promiscuous mode



3. On the *Ports* tab, click *Edit*.
- A dialog appears.

4. Select the *Security* tab.
5. Select *Accept* from the drop-down list for *Promiscuous Mode*.



The setting on the port group overrides the virtual switch setting.

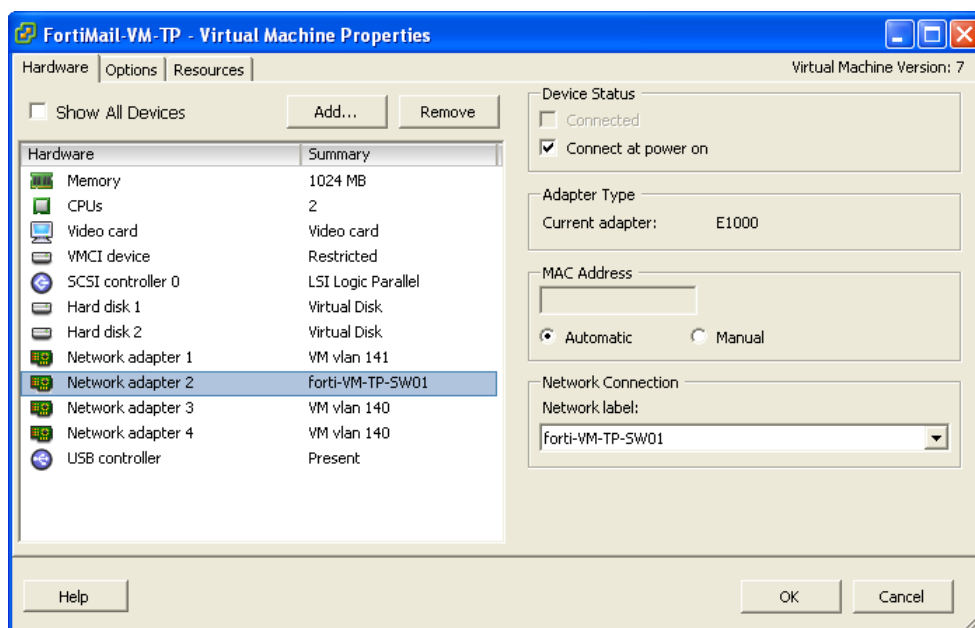
Next, you need to link a FortiMail VM network adapter to each new vSwitch.

#### To modify a network adapter

1. Select your FortiMail VM machine in the left navigation pane.
2. On the *Getting Started* tab, select *Edit Virtual Machine Settings*.

A window similar to [Figure 13](#) appears.

**Figure 13:**Network adapter



3. On the *Hardware* tab, select a network adapter from the hardware list.
4. Select the new vSwitch from the *Network label* drop-down list.
5. Click *OK*.

Later, configure the applicable FortiMail VM port or ports using the web-based manager. See the topic “Editing Network Interfaces” in the [FortiMail Administration Guide](#).

## Configuring the number of CPUs

You may have more than one CPU depending on the type of license you purchased. By default, FortiMail VM is set to one CPU. You can change the number of CPUs that the virtual machine uses by changing the number of virtual processors. (You cannot change the CPU setting while FortiMail VM is running.)

#### To change the number of CPUs

1. Make sure FortiMail VM is not running.
2. Go to the *Hardware* tab as shown in [Figure 13](#).

3. Select *CPUs* in the hardware list.
4. In the CPUs drop-down list, select the number of virtual processors for the virtual machine.
5. Click *OK*.

### Maintaining license limits

If you set the number of CPUs or memory beyond your license limit, your FortiMail VM license becomes invalid. Use the CLI command

```
get system status
```

to determine if you have exceeded licensed limits. If so, use the vSphere Client to restore valid settings.

### Configuring a smaller disk

FortiMail VM comes prepackaged with a 1-TB disk. An alternate configuration with a 250-GB disk is provided for installing in a VMware datastore that does not support a 1-TB disk.

If neither of these sizes suits your resources, you can configure FortiMail VM to support a disk size as small as 50 GB. Starting from v4.0 MR3 Patch 1, you can even configure the virtual disk to as small as 5 GB. The FortiMail VM system will still be able to start up with warnings. However, the system will not start up if the virtual disk is smaller than the 5 GB minimum size.

#### To reduce the disk size

1. Stop FortiMail VM if it is running.
2. Log in to the vSphere Client.
3. On the *Hardware* tab (see [Figure 13](#)), select either the 250-GB or 1-TB disk (Hard Disk 2) in the hardware list.
4. Click *Remove*.
5. Click *OK*.
6. Click *Add* and select *Hard Disk*.
7. Configure the new disk.  
The *Virtual Device Node* setting must be SCSI (0:1).
8. Complete the disk configuration and click *OK*.
9. Start the FortiMail VM.

If FortiMail VM was previously run, you need to manually initialize this new disk.

10. Log in as the administrator and run the CLI command:

```
execute partitionlogdisk 10
```

## Starting FortiMail VM

Once you successfully deploy the OVF file and set up the network (if required), you need to power on your FortiMail VM virtual appliance and enter initial setup commands.

#### To power on FortiMail VM

1. Log in to the vSphere Client.
2. Select your newly deployed FortiMail VM virtual machine in the left navigation pane of vSphere Client and power it on.

There are several ways to power on a virtual machine. The easiest is to click the green triangle icon on the icon bar.

3. Select the *Console* tab in the vSphere Client window.

When you power on the virtual appliance, the console displays a sequence of messages ending in a login prompt.



At this point, you have accessed the FortiMail VM command line interface (CLI) but you do not have access to all CLI commands until you confirm the license in a later step.

4. Press the Enter key once to get a new prompt, and log in using the default FortiMail VM administrator name, `admin`.  
There is no password yet for this administrator, so press Enter when prompted.  
You will see a welcome message.
5. Use CLI commands to configure the IP address of a virtual interface (usually `port1`) on the virtual appliance to use for administrative access.  
You will later access the FortiMail VM web-based manager through a browser at this IP.

**Figure 14:**IP address configuration

```
Getting Started Summary Resource Allocation Performance Events Console Permissions
FortiMail login: admin
Password:
Welcome !

FortiMail # config system interface
(interface)# edit port1
(port1)# set ip 182.20.120.168/24
(port1)# end
```

Enter the following CLI commands in the vSphere Client console:

```
config system interface
  edit <port_name>
    set ip <ipv4-mask>
  end
```

Where:

- `port_name` is the name of the FortiMail VM virtual port (usually `port1`)
- `ipv4-mask` is the IP (with a netmask) of your virtual machine on the ESX/ESXi server



Take note of the IP you enter. Later, you will use that IP, minus the netmask, to configure and manage FortiMail VM through the CLI or web-based manager.



6. Use CLI commands to configure a static route to act as a default gateway. This is needed for license updates.

Enter the following CLI commands in the vSphere Client console:

```
config system route
  edit <index_int>
    set gateway <gateway_ipv4>
  end
```

Where:

- <index\_int> is the index number, such as 1, of the route in the list of static routes
- <gateway\_ipv4> is the IP address of the gateway router

### To log on to the FortiMail VM web UI

When you successfully configure administrative access, the web-based manager login dialog may appear automatically if you have a browser open.

If not, open a browser and enter the IP address of the virtual interface you set in Step 5 and include /admin with the URL; for example:

```
https://192.168.1.99/admin
```

**Table 2: FortiMail VM start-up settings**

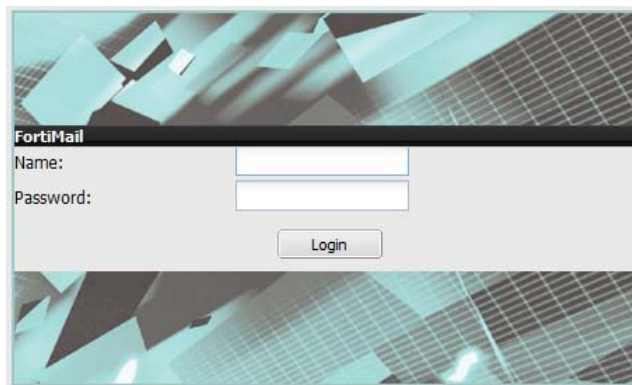
<b>Web-based administrator URL</b>	https://<virtual-ipaddress>/admin
<b>Administrator account</b>	admin
<b>Administrator password</b>	none
<b>Management access</b>	HTTPS, SSH, ping
<b>Operation mode</b>	gateway mode
<b>Webmail URL</b>	https://<virtual-ipaddress>



If you are connecting to FortiMail VM with a trial license or a LENC version of FortiMail, you may not be able to see the logon page due to an SSL cipher error during the connection. In this case, you must configure your browser to accept low encryption. For example, in Mozilla Firefox, if you receive this error message:  
ssl\_error\_no\_cypher\_overlap  
you may need to enter about:config in the URL bar, then set security.ssl3.rsa.rc4\_40\_md5 to true.

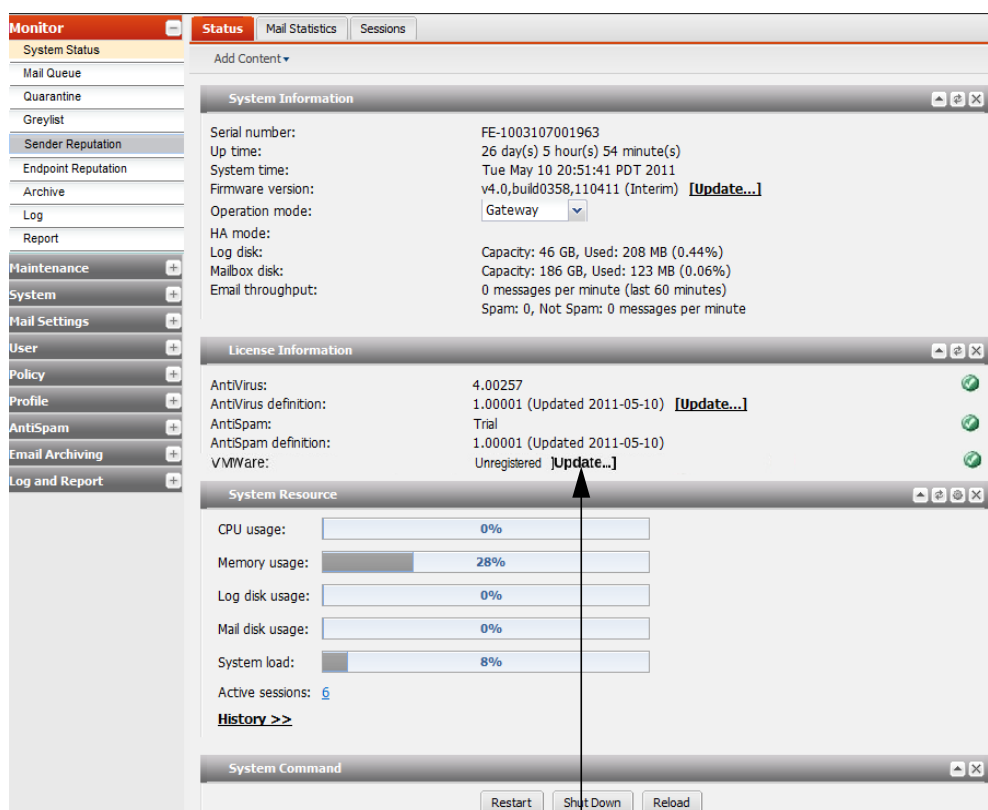
1. On the logon page, in *Name*, enter admin.
2. Skip the *Password* field (until you assign the admin a password later).
3. Click *Logon*.

**Figure 15:**FortiMail VM login



The FortiMail web-based manager opens at the dashboard.

**Figure 16:**FortiMail VM dashboard



**License update**

## Installing the license

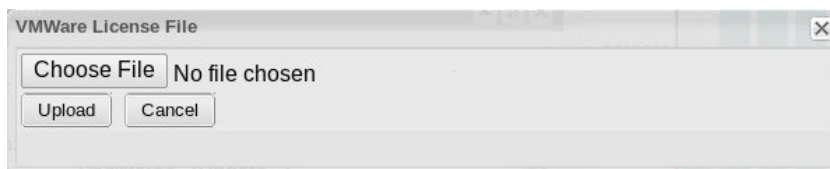
If you have a FortiMail VM license (for details, see “[Licensing](#)” on page 4), you can install it now after you start up FortiMail VM.

### To install the license

1. In the *License Information* widget on the FortiMail VM web-based manager, click the *Update* link to the right of *VMware*.

The license prompt appears.

**Figure 17:**FortiMial VM license prompt



2. Click *Choose File* and locate the license file (.lic) you downloaded earlier from Fortinet.
3. Click *Upload* on the license prompt dialog.

A message box appears stating your license is being authenticated. This may take a few minutes.

If you uploaded a valid license, a second message box will appear informing you that your license authenticated successfully.

4. Click *OK* on the message box.

The system will reload and log out.

5. Log in again if prompted using `admin`, as the user name.

Congratulations! You have successfully installed FortiMial VM and can now configure your virtual appliance.

## What next?

At this point, FortiMial VM is running but is almost entirely unconfigured. Before you can use it to protect mail servers, you must complete a basic installation. Follow the instructions beginning in the “Choosing the operation mode” chapter of the [FortiMail Install Guide](#).

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